

FIRST RECORD OF JUVENILE CUSK-EEL *OPHIDION ROCHEI* (OPHIDIIDAE) IN THE ADRIATIC. **Jakov DULČIĆ**, Institute of Oceanography and Fisheries, P.O. Box 500, Šetalište Ivana Meštrovića 63, 21000 Split, CROATIA.

RÉSUMÉ. Deux spécimens d'une espèce rare d'Ophiidae *Ophidion rochei* Müller, 1845, sont signalés pour la première fois dans l'Adriatique.

Keywords Ophiidiidae - *Ophidion rochei* - MED - Adriatic - First record.

Fishes of the genus *Ophidion* Linnaeus, 1758 are represented in the Mediterranean and Black Sea by two species. *O. barbatum* Linnaeus, 1758 occurs in the northern Mediterranean, from Gibraltar to Israel, and in the eastern Atlantic from southern England to Senegal (Nielsen, 1986). *O. rochei* Müller, 1845 occurs in the Mediterranean and Black Sea (Nielsen, 1986), generally on sandy bottoms from a few to 150 m depth (Jardas, 1996). According to Pallaoro and Jardas (1996) *O. rochei* is fairly rare, while Kovačić (1998) noted it is rare in the Adriatic Sea. This species is very close to *Ophidion barbatum* Linnaeus, 1758, from which it differs only by the number of gillrakers (Jardas, 1996). Bini (1969) did not mention this species for the Adriatic Sea, while Tortonese (1975) reported about the presence of this species in the Split area (eastern middle Adriatic). This oviparous fish is benthic on continental shelf in tropical and temperate waters reaching a maximum of 30 cm in standard length (Nielsen, 1986). This species is often hiding on the bottom (usually sand) during day and active during night (Jardas, 1996). Matallanas and Riba (1980) presented several aspects of the biology of *O. rochei*, while Matallanas (1981) showed data about its diet on the Catalan coast.

On 20 April 2000, two juvenile specimens of the cusk-eel, *O. rochei* were collected at 00h20 with a beach seine without sac on the sandy beach Duće-Glava (43°26'30"N; 16°41'E) at 1.5 m depth near this town Omiš and estuary of River Cetina (Fig. 1). The sampling area was characteristically sandy overgrown by meadows of *Cystoseira barbata* and *Ulva rigida*.

The specimens were identified according to Nielsen (1986) and Casadevall *et al.* (1996). They are deposited in the Ichthyological



Fig. 1. Location of sampling site (•), station Duće-Glava, Croatian coast.

Collection of the Institute of Oceanography and Fisheries in Split (IOR-No. 232A). The specimens were preserved in 4% buffered formalin immediately after capture, measured to the nearest 0.1 mm and weighed to the nearest 0.01 g. These juveniles were defined as immature specimens with already formed scales (Katavić, 1984).

Table I shows the main morphometric, meristic and weight data of the two juvenile specimens. The meristic characteristics closely correspond to data given by Jardas (1996) and Casadevall *et al.* (1996). Both specimens with long and slender body and short rostral spine; pelvic fin rays unequal in length; body brownish

Table I. Morphometric, meristic data and weight of the cusk-eel *Ophidion rochei* juveniles at the station Duće-Glava (Adriatic).

	Specimens	
	1	2
Total length (mm)	71	68
Weight (g)	1.53	1.62
Number of long gillrakers	4	4
Dorsal fin rays	126	125
Anal fin rays	98	96
Left pectoral fin rays	17	16
Right pectoral fin rays	17	16

dorsally and whitish ventrally with dorsal and anal fins black-edged; head scaleless; squamation beginning posterior to the operculum; ventral part of posterior two-thirds of body scaleless; upper and lower jaws equal in length.

Adult stage has only been listed twice for the eastern Adriatic, near the Islet of Kamčić-near Murter Island (middle Adriatic) on 3rd December 1986 (Pallaoro and Jarda, 1996) and in the Kvarner area (northern Adriatic) on 7th February 1996 (Kovačić, 1998). The present juvenile specimens seems to be the first record of the cusk-eel juveniles in the Adriatic. Newly hatched *O. rochei* larvae measure 3.24 to 3.4 mm (Sparta, 1932), while Banareescu (1964) indicated 2.7 mm. Most Ophidiiforms become benthic when they reach a total length of 25-30 mm (Gordon *et al.*, 1984). The smallest known specimen of 83 mm was reported from the Catalan coast (Matallanas and Riba, 1980; Matallanas, 1981). Taking into consideration that the cusk-eel spawns from June to September (Jarda, 1996), the specimens described in the present paper (71 and 68 mm) are about 7 or 10 months old.

REFERENCES

- BANARESCU P., 1964. Pisces. Osteichthyes. Fauna Republicii Populare Romine, Bucharest, 13: 962 pp.
- BINI G., 1969. Atlante dei Pesci delle Coste Italiane. Vol. VII, pp. 13-18. Roma: Mondo Somerso Edit.
- CASADEVALL M., MATA LLANAS J., CARRASSON M. & M. MUÑOZ, 1996. Morphometric, meristic and anatomical differences between *Ophidion barbatum* L., 1758 and *O. rochei* Müller, 1845 (Pisces, Ophidiidae). *Publ. Espec. Inst. Esp. Oceanogr.*, 21: 45-61.
- GORDON D.J., MARKLE D.F. & J.E. OLNEY, 1984. Ophidiiformes: Development and relationships. In: *Ontogeny and Systematics of Fishes*, 1 (Moser H.G. *et al.*, eds), pp. 308-319. Lawrence, Kansas.
- JARDA S I., 1996. Jadranska ihtiofauna. 552 pp. Zagreb: Školska knjiga. (in Croatian)
- KATAVIĆ I., 1984. Inducirano mriješćenje i uzgoj ranih razvojnih stadija lubina, *Dicentrarchus labrax* (Linnaeus, 1758) i komarče, *Sparus aurata* (Linnaeus, 1758). Ph.D. Thesis, Univ. of Zagreb.
- KOVAČIĆ M., 1998. Ichthyological collection (Cyclostomata, Selachii, Osteichthyes) of the Natural History Museum Rijeka. *Prirodoslovna istraživanja riječkog područja*, 1: 685-698.
- MATA LLANAS J., 1981. Régimen alimentario de *Ophidion rochei* (Pisces: Ophidiidae) en el Mediterraneo español. Comparación con el de *O. barbatum*. *Bol. Inst. Esp. Oceanogr.*, 6: 174-185.
- MATA LLANAS J. & G. RIBA, 1980. Aspectos biológicos de *Ophidion barbatum* Linnaeus, 1758 y de *O. rochei* Müller, 1845 (Pisces, Ophidiidae) de la costa catalana. *Invest. Pesq.*, 44: 399-406.
- NIELSEN J.G., 1986. Ophidiidae. In: *Fishes of the North-Eastern Atlantic and the Mediterranean*, Vol. 3 (Whitehead P.J.P., Bauchot M.-L., Hureau J.-C., Nielsen J.G. & E. Tortonese, eds), pp. 158-1166, Paris: UNESCO.
- PALLAORO A. & I. JARDA S, 1996. Ichthyological collection of the Institute of Oceanography and Fisheries in Split (Croatia). *Nat. Croat.*, 5(3): 177-219.
- SPARTA A., 1932. Nuovo contributo alla conoscenza dello sviluppo post-embrionale in "*Ophidion barbatum*" L. ed in "*O. assallii*" Risso. *R. Comitato Talassografico Italiano*, Memoria CXC.
- TORTONESE E., 1975. Fauna d'Italia. Osteichthyes. Pesci Ossei. pp. 407-408. Bologna: Edizioni Calderini.

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